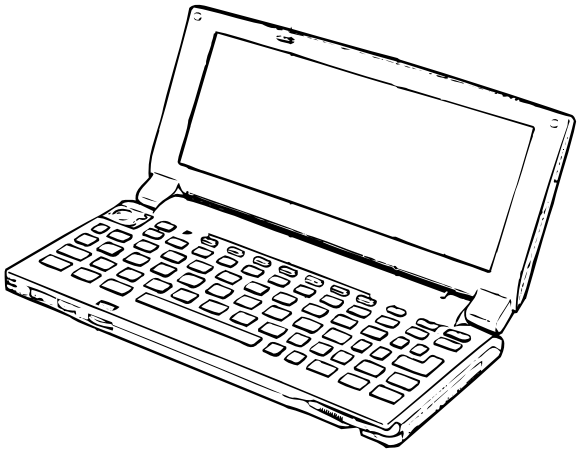
SHARP SERVICE MANUAL

CODE: 00ZHC4000SP/E



Handheld PC

HC-4000

MODEL HC-4100

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PARTS GUIDE

Parts marked with "! " is important for maintaining the safety of the set. Be sure to replace these parts with specified ones for maintaining the safety and performance of the set.

SHARP CORPORATION

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CHAPTER 1. SPECIFICATION

The HC-4000/HC-4100 is a handheld PC using the Microsoft® Windows® CE 2.0 operating system, which is very similar to the Microsoft Windows™ 95 and Windows NT 4.0 operating systems.

The Microsoft Windows® CE 2.0 operating system comes standard with the following applications:

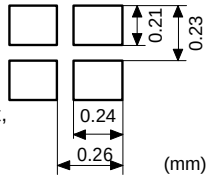
- Pocket Word
- Pocket Excel
- Pocket PowerPoint
- Windows CE Services 2.0
- Pocket Internet Explorer
- Pocket Outlook™ (Contacts/Calendar/Tasks/Inbox)

Additional applications from SHARP added to the unit make your mobile life even more comfortable:

- Image Editor (to edit images)
- Voice Recorder (to record audio notes)
- IR Data Exchange with SHARP ZR series units

DISPLAY SECTION

ELEMENT:	DFSTN LCD
DISPLAY:	640 × 240 dot grayscale high contrast with backlight, DFSTN LCD



LSI

CPU:	LH5809
ASIC:	LH58172

POWER SUPPLY

Main:	3V DC, 2 AA-size (LR6) alkaline batteries, NiMH Rechargeable Battery Pack (option), AC adaptor (option)
Backup:	3V DC, CR2032 lithium battery

POWER CONSUMPTION

1.8 W

AUTO POWER OFF TIME

15 minutes

MEMORY PROTECT

Yes

DIMENSIONS

Open: 186 (W) × 187 (D) × 14.1 (H) mm.
Closed: 186 (W) × 93.5 (D) × 26.4 (H) mm.

Weight

Approx. 410 g including batteries

Interfaces

RS-232C

RJ-11

Infrared port (IrDA compliant), IR send distance: 50 cm (20 inch), IR distance may change depending on the system used.

PC Card slot: 1 (Type II)

Internal Fax/Modem

Transmission speed:	Data modem 33.6 kbps, Fax modem 9.6 kbps
Dialing capability:	Tone and Pulse
Data communication command:	Data modem AT command set, FAX modem EIA/TIA 578 class 1, Autodial YES

Memory

4 MB (HC-4000)

8 MB (HC-4100)

ROM

16 MB

Battery life

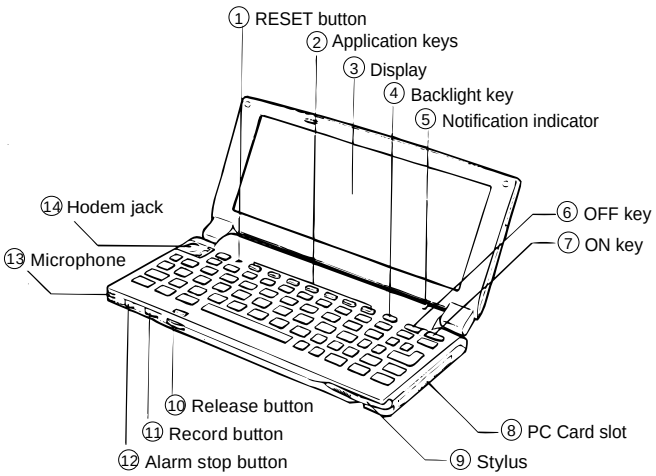
Main:	2 AA-size (LR6) alkaline batteries, 000 hours approx. NiMH Rechargeable Battery Pack, 000 hours approx. Main battery life varies considerably depending on usage.
Backup:	1 month approx. (HC-4000) 2 weeks approx. (HC-4100) (with depleted main batteries) 5 years approx. (with replacement of depleted main batteries)

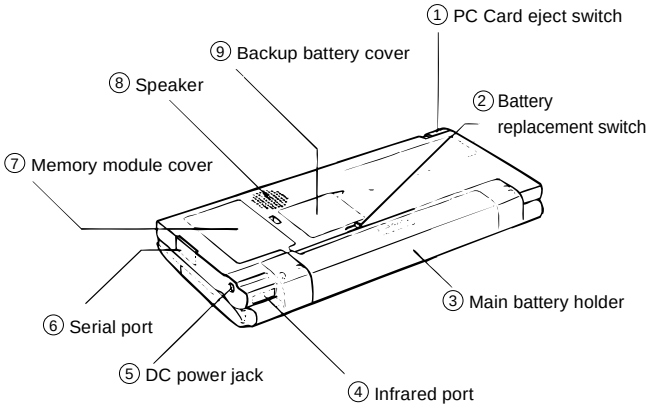
Operating temperature: 32° to 104°F (0° to 40°C)

Accessories

Serial cable, Modular phone cable, CD-ROM from Microsoft, CD-ROM from SHARP, Two AA alkaline batteries, CR2032 lithium battery, Operation Manual

Part names and functions





1 **RESET button**
Press to reset and initialize the unit.

2 **Application keys**
Press to start the indicated application.

3 **Display**
Shows information and also functions as a "touch panel" for selecting operations, data entry, etc.

4 **Backlight key**
Press to turn the backlight on or off.

5 **Notification indicator**
Flashes red when a schedule alarm time is reached.
Solid green when the modem or microphone is in use.
Solid amber when the optional NiMH Rechargeable Battery Pack is charging.

6 **OFF key**
Press to turn off the unit.

7 **ON key**
Press to turn on the unit.

8 **PC Card slot**
For inserting a Type II PCMCIA card.

9 **Stylus**
Use it to write on the display or navigate through the software.

F **Release button**
Press to open the unit.

G **Record button**
Press and keep holding for quick recording.

H **Alarm stop button**
Stop the schedule alarm and clear the Notification indicator.

I **Microphone**
For voice note or other recording.

J **Modem jack**
For fax and data communication.

1 **PC Card eject switch**
Slide to eject the inserted PC Card.

2 **Battery replacement switch**
For replacing main batteries as well as the backup battery.

3 **Main battery holder**
Holds two AA alkaline batteries, or can be replaced with the optional NiMH Rechargeable Battery Pack.

4 **Infrared port**
For wireless communication with other handheld PCs and infrared-capable notebook and desktop PCs, and printing to infrared-capable printers.

5 **DC power jack**
For connecting to the AC adaptor included in the optional Docking Station Kit.

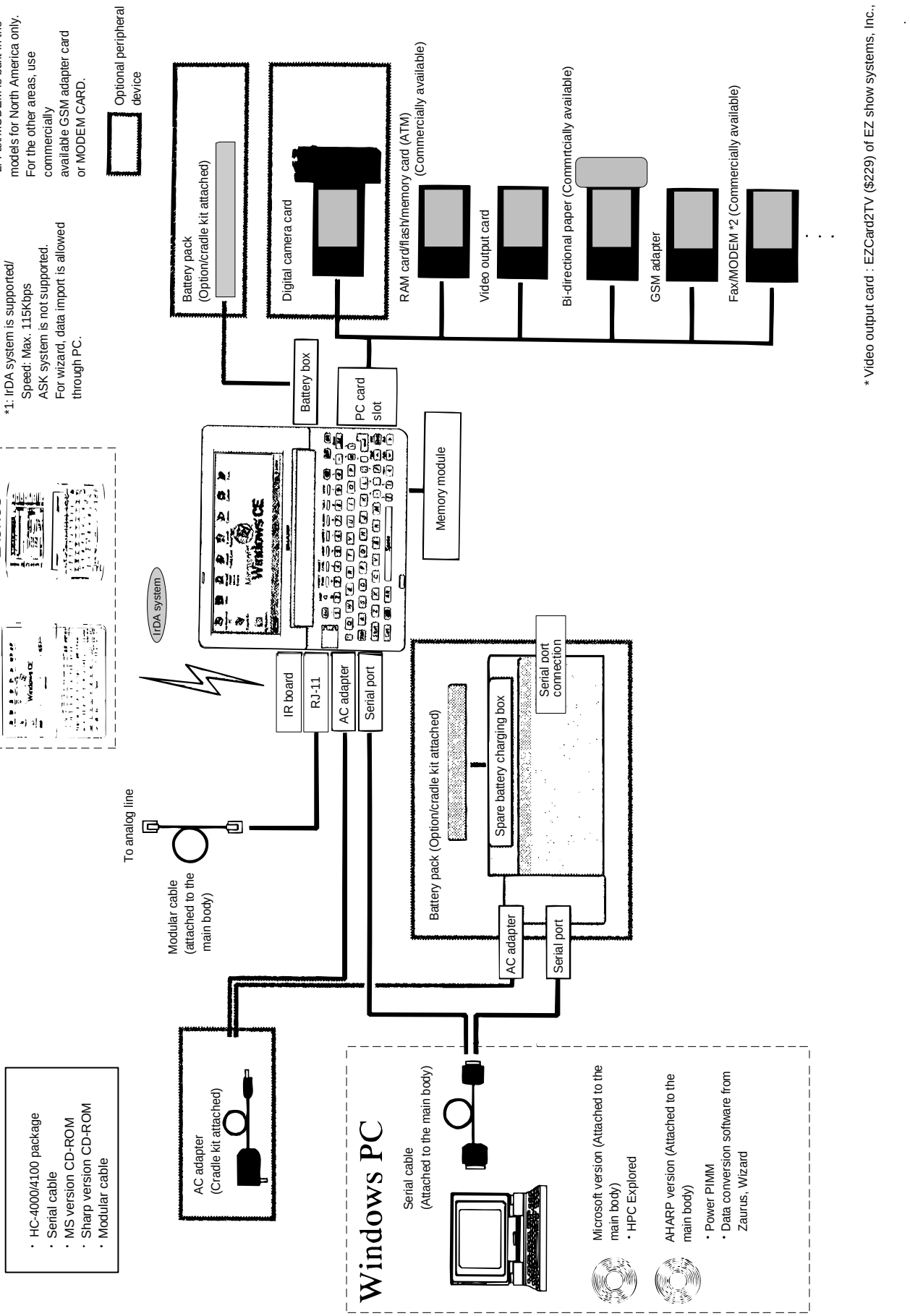
6 **Serial port**
For connecting to a desktop PC for data transfer or to a printer for printing.

7 **Memory module cover**
Open to replace the Memory module, if necessary.

8 **Speaker**

9 **Backup battery cover**
Open to replace the backup battery.

SYSTEM CONFIGURATION


HC-4000/4100
ZAURUS
IR board
RJ-11
AC adapter
Serial port
IrDA system
Battery box
PC card slot
Memory module
Battery pack (Option/cradle kit attached)
Digital camera card
RAM card/flash/memory card (ATM) (Commercially available)
Video output card
Bi-directional paper (Commrtcially available)
GSM adapter
Fax/MODEM *2 (Commercially available)
Optional peripheral device
*1: IrDA system is supported/ Speed: Max. 115Kbps ASK system is not supported. For wizard, data import is allowed through PC.
*2: Fax/MODEM is built in the models for North America only. For the other areas, use commercially available GSM adapter card or MODEM CARD.
* Video output card : EZCard2TV ($229) of EZ show systems, Inc.,
To analog line
Modular cable (attached to the main body)
Spare battery charging box
Serial port connection
AC adapter (Cradle kit attached)
Windows PC
Serial cable (Attached to the main body)
Microsoft version (Attached to the main body)
・HPC Explored
AHARP version (Attached to the main body)
・Power PIMM
・Data conversion software from Zaurus, Wizard
・HC-4000/4100 package
・Serial cable
・MS version CD-ROM
・Sharp version CD-ROM
・Modular cable

CHAPTER 3. NOTE FOR SERVICING

Caution:

1. This unit employs a PSRAM instead of a conventional SRAM for memory. The PSRAM allows to flow a standby current of 20 times as great as that flowing in an SRAM.

   Similarly to the conventional models, the main battery is packed together with the unit and the backup battery is installed in the unit. The backup battery may be exhausted before arriving at the user. In order to prevent against this, power supply to the PSRAM is electrically halted in the shipment setting.

   (Note) **When servicing also, do not leave the backup battery without necessary treatment.**

2. Before executing disassembly, assembly, diagnostic, rewriting of the flash EEPROM, etc., be sure to save the user data. (Refer to "4. Data exchange.") After servicing, set the clock to the punctual time and return the set to the user. (The clock is initialized by servicing.)

1. Shipment setting

Shipment setting procedure (After the inspection, be sure to perform the following shipment setting).

When diag "40 DISABLE BACKUP BATTERY" is selected, the following display is shown and the setting circuit is turned off by the software. (The power to VRAM is cut off.)

BACKUP BATTERY DISABLE OK

- Setting circuit state check
- When the setting circuit is off (Power to VRAM is cut off.)
- When the voltage between check pad "VRAM" and "GND" is 0 ~ 0.5V, the setting circuit is off.
- When the setting circuit is on (Power to VRAM is supplied.)
- When the voltage between check pad "VRAM" and "GND" is 2.3V or above, the setting circuit is on.

(Note) In the ZR-5700/5800, never make the following settings before shipment, which will fasten backup battery exhaustion.

[B] and [S] keys

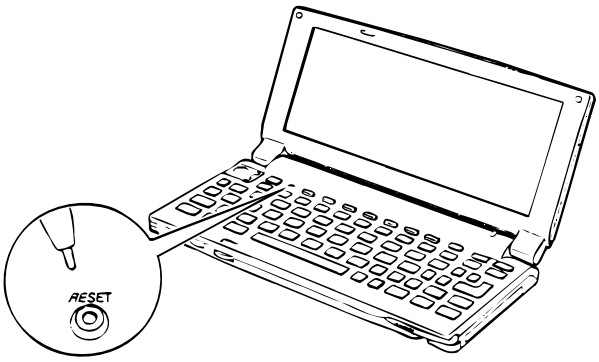
[B] and [C] keys

2. Resetting the HC-4000/4100

If the unit stops responding while you are using it, you can reset the unit. Make sure the unit is turned on, and then press the **RESET** button with the stylus.

Caution:

The reset function will not work if the unit is turned off when you press the **RESET** button.



If the problem still persists after you have reset the unit, try the following (full reset) remedy.

Caution:

The following procedure will cause all data on the unit to be lost and you must restore data from your previous backup. However, any data added or modified after your last backup will be lost permanently.

1. Turn off the unit
2. Remove the backup battery.
3. Remove the main batteries.
4. Wait for 30 seconds, then reinstall the main batteries and the backup battery.
5. Turn on and re-setup the unit using the H/PC Setup Wizard.
6. Restore your data from a backup.

Note:

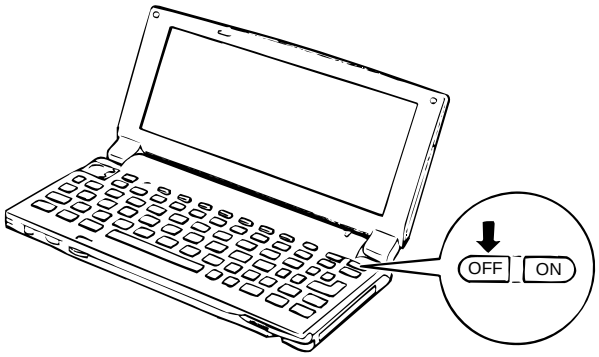
If you forget your password, you must set up your unit again, using the above steps.

3. Battery Replacement

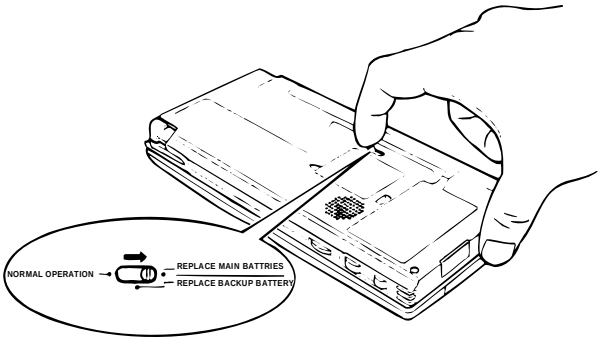
When the batteries are low, your unit displays warning messages prompting you to replace the batteries as soon as possible. You can also check the battery power by double-tapping the power status icon if it appears on the task bar.

Replacing the main batteries

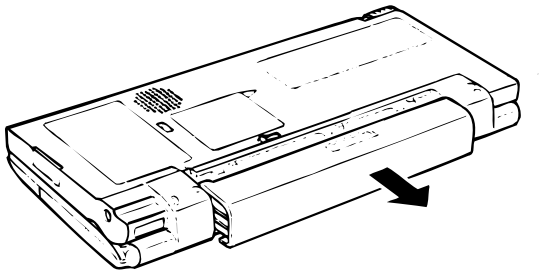
1. Turn off the unit.



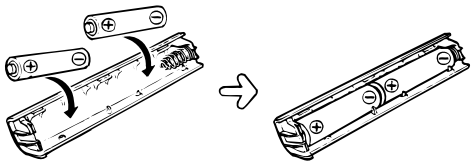
2. Slide the battery replacement switch to the REPLACE MAIN BATTERIES position.



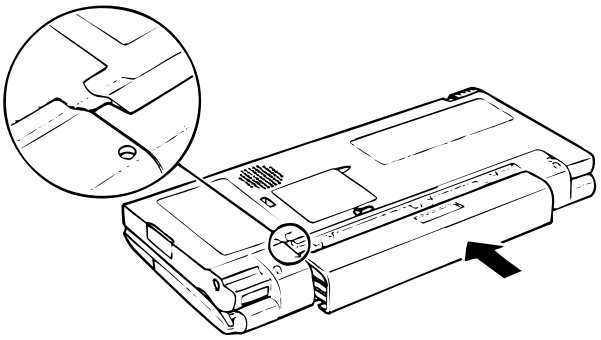
3. Pull out the battery holder and remove the old batteries. Discard them properly.



4. Insert two new AA alkaline batteries into the battery holder, noting the directions indicated by the plus (+) and minus (–) signs inside the holder.



5. Reattach the battery holder to the unit, noting the position of the projecting part on the battery holder.



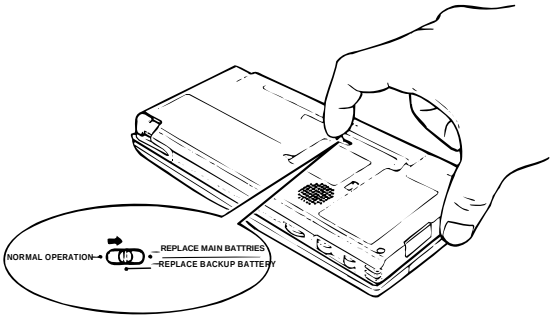
6. Slide the battery replacement switch back to the NORMAL OPERATION position.

   If this proves difficult, check to make sure the main battery holder is completely inserted.

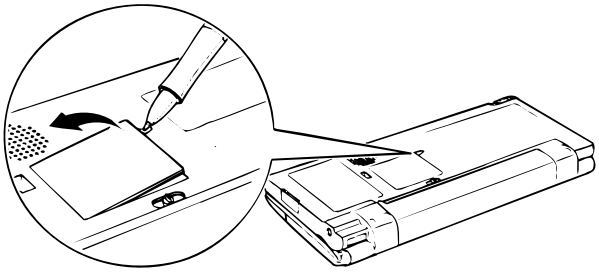
7. After battery replacement, turn on the unit and make sure no warning message appears.

Replacing the backup battery

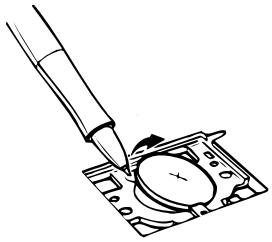
1. Turn off the unit.
2. Slide the battery replacement switch to the REPLACE BACKUP BATTERY position.



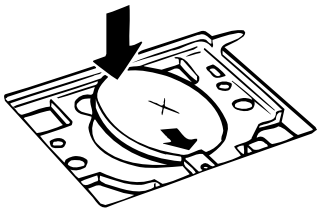
3. Use a ballpoint pen to open the backup battery cover. Do not use the stylus.



4. Remove the old backup battery with a ballpoint pen.



5. Insert a new CR-2032 lithium battery with the plus (+) sign facing up.



6. Put the backup battery cover back in place and slide the battery replacement switch to the NORMAL OPERATION position.
7. After battery replacement, turn on the unit and make sure no warning message appears.

About power source

- You can use two AA alkaline batteries or the optional NiMH Rechargeable Battery Pack to power your unit, or the AC adaptor included in the optional Docking Station Kit.
- If the main batteries are not installed, or are depleted, the unit will not function even when connected to an AC power source.
- Caution: When the main batteries are depleted, replace them promptly with new batteries. If the depleted main batteries are not replaced, the backup battery will be drained more quickly than normal, and data loss may occur after about 2 weeks.
- ?????

Important points to remember when installing new batteries:

- Be sure not to use any of the following as main batteries: manganese batteries or nickel cadmium rechargeable batteries. These are easily mistaken for alkaline batteries.
- Do not remove the main batteries and the backup battery at the same time (this will result in the loss of all stored data).
- Backup important data before replacing batteries.
- Replace both main batteries at the same time with new batteries of the same type.
- When the main battery low warning message and the backup battery low warning message appear at the same time, replace the backup battery first. After the backup battery replacement, turn on your unit and make sure the backup battery low message is gone, then you can proceed to replace the main batteries.

Caution:

- Keep batteries out of the reach of children.
- Danger of explosion if batteries are incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Discard used batteries according to the manufacturer's instructions.
- Backup battery: Replace battery with Panasonic type CR2032 only. Use of another battery may present a risk of fire of explosion. See operation manual for safety instructions.
- Batteries may explode if mistreated. Do not recharge except the optional NiMH Rechargeable Battery Pack, disassemble or dispose of in fire.

Connecting the unit to your PC

You can connect the unit to your desktop PC to backup data, synchronize activities, transfer files, etc.

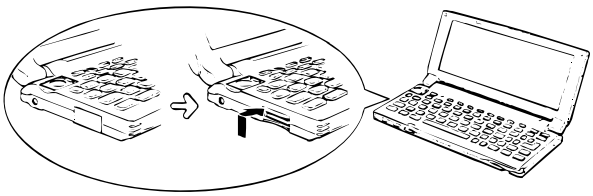
Installing the Windows CE Services software

Before connecting the unit to a PC, you need to install the Windows CE Services software on your PC and specify a serial port for use with the unit. Use the supplied CD-ROM from Microsoft for the installation.

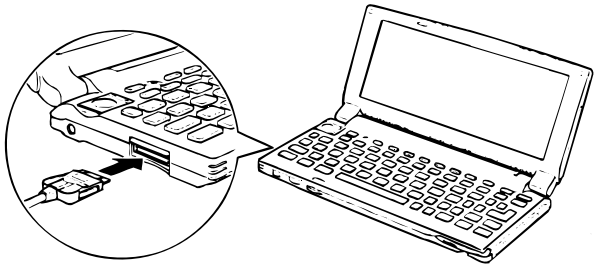
If this is the first time you are connecting the unit to your PC, the Set Up New Partner Wizard will appear on the PC. Follow the instructions to complete the setup.

Connect the unit to the desktop PC as follows:

1. Turn on the unit.
2. Flip open the serial port cover and push it into the unit as shown.



3. Insert the 18-pin end of the supplied serial cable into the serial port on the unit.



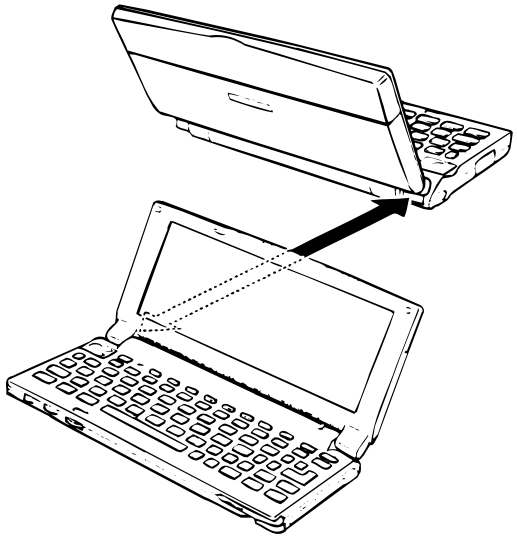
4. Insert the other end of the cable into the serial port on your PC that you specified during the Windows CE Services installation.

Using the infrared port for file transfer

You can use the built-in infrared port to transfer files with other handheld PCs compliant with the IrDA (115.2 kbps) standards.

Make sure both handheld PCs are turned on, then take the following steps:

1. Align the two handheld PCs so that their infrared ports are facing each other.



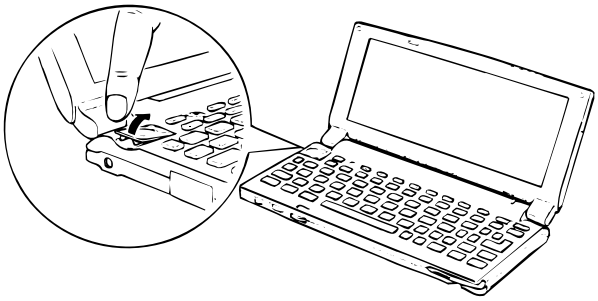
2. From the sending unit, tap to select the file to transfer.
3. On the receiving unit, tap **Receive** from the **File** menu, then specify the type of the sending unit.
4. On the sending unit, tap **Send** from the **File** menu, or tap **Infrared Recipient** from **Send To** of the **File** menu. Specify the type of the receiving unit, then start sending the data.

Using the internal fax/modem

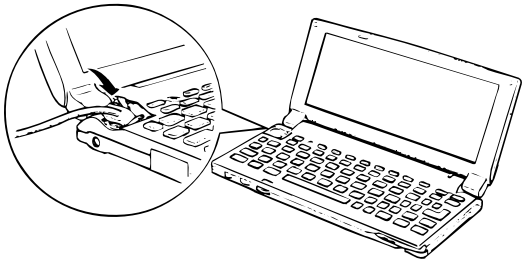
You can use the internal fax/modem to perform fax and data transmission (9.6 kbps for fax and 33.6 kbps for data).

Connect the internal fax/modem to an analog telephone line as follows:

1. Use a finger to gently open the modem port.



2. Insert one end of the supplied modular phone cable into the modem jack.



3. Insert the other end of the modular phone cable into a telephone outlet.

Note:

Before using the internal fax/modem for communication, check that it is set up in Windows CE.

Using a PC Card

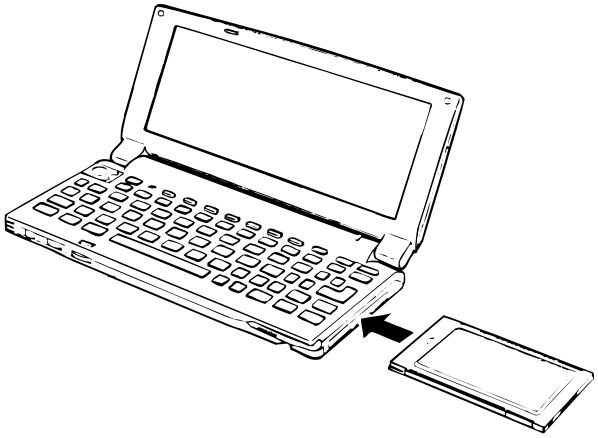
Caution:

Not all PC Cards will work with the unit. Be sure to use only recommended PC Cards. Using non-recommended PC Cards may cause problems such as damage to the unit or the PC Card.

Contact your local dealer for more information on recommended PC Cards.

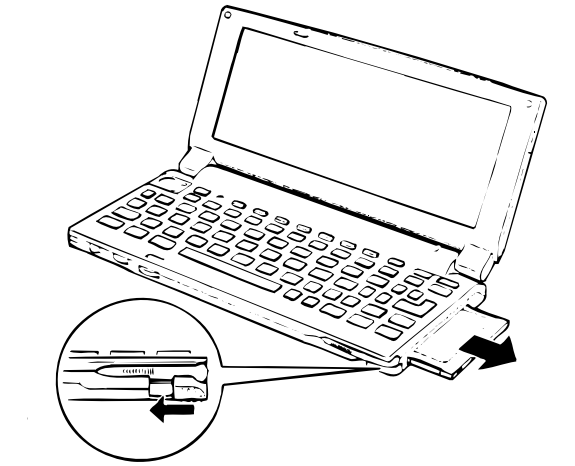
Inserting a PC Card

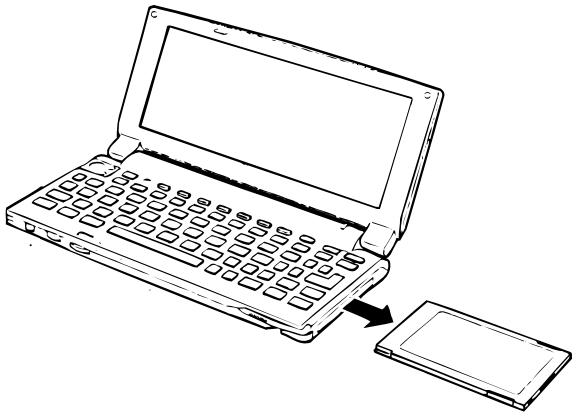
Insert the PC Card into the slot as far as it will go. Make sure the PC Card is facing up. If the card will not go in, check the orientation. Never force the card or it or the main unit may be damaged.



Removing a PC Card

1. Close all applications accessing, or otherwise utilizing, data on the inserted PC Card.
2. Turn off the unit.
3. Slide the eject switch to release the PC Card, and remove it by hand.





4. Data Exchange with other devices via IP

Data exchange with other devices via IR

You can exchange data with other devices such as SHARP ZR Series units, using infrared communication. The following tables indicate the type of data you can exchange.

Your unit	ZR Series unit	How much data
Contacts	Contact1	One or more contacts
Explorer	PC Files	One file

Your unit	IrTran-P device	How much data
Image Editor	(depends on the device)	One JPEG file

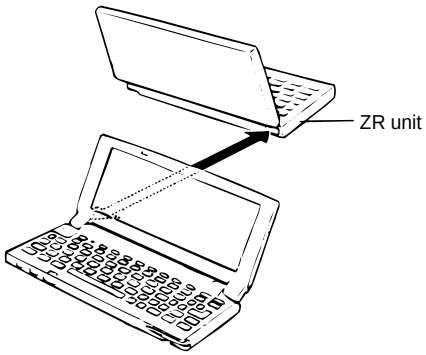
Note:

You must install the software program from SHARP CD-ROM before exchanging data with the IrTran-P device.

Sending data from your unit

The following uses Contacts as an example.

1. Align your unit and the receiving unit so that their infrared ports are facing each other.



2. On your unit, highlight the desired data.
3. Set the receiving unit to the receiving mode. In the case of SHARP ZR Series unit, press the **GET** key.
4. On your unit, tap **Send** from the **File** menu, then select **ZR Series** .

Note:

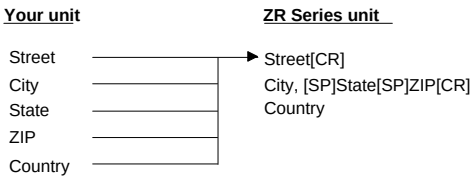
For Explorer files, select a file in step 2. In step 4, tap **File** , **Send To**, and **Infrared Recipient** to send the file.

Notes on field mapping when sending data to a ZR Series unit

PC files are sent as they are without any conversion. For Contacts data, the following rules apply:

- Contacts data on the unit is converted to Contact1 data on the ZR Series unit.
- Restrictions on data sizes differ between the two units. On your unit, there is a field size limit. On the ZR Series unit, the record size must be less than 2048 bytes but there is no limit on the field size. When data is received on the ZR Series unit, data exceeding the 2048 byte limit is truncated.
- Since the name information on your unit is stored in several fields, they are mapped into one single field on the ZR Series unit as follows:

- Your unit used more fields in storing address information than the ZR Series unit.

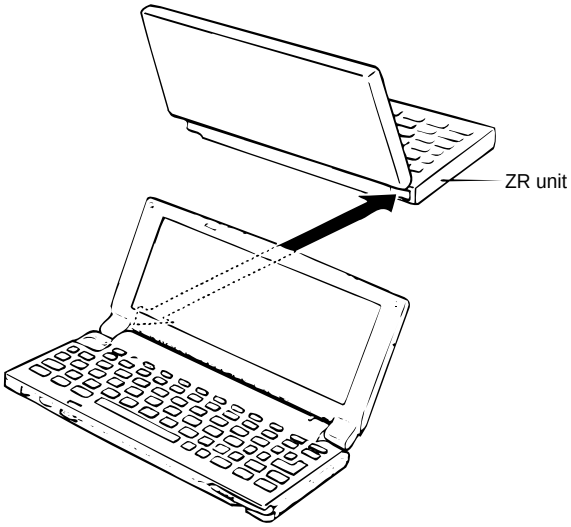


- The Name field on the ZR Series unit is always required. If this field is empty, then the ZR Series unit will store it as Untitled.

Receiving data to your unit

The following uses contacts as an example.

1. Align your unit and the sending unit so that their infrared ports are facing each other.



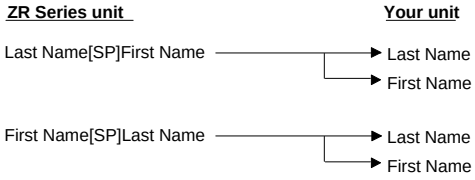
2. On the sending unit, highlight the desired data.
3. On your unit, tap **Receive** from the **File** menu, then select **ZR Series** .
4. Set the sending unit to the sending mode. In case of SHARP ZR Series unit, press **SEND** key, then start receiving the data.

Notes on field mapping when receiving data from ZR Series unit

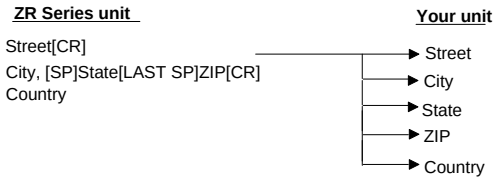
PC files are received as they are without any conversion. For Contacts data, the following rules apply:

- Contact1 data on the ZR Series unit is converted to Contacts data on the handheld PC.
- Restrictions on data sizes differ between the two units. On the handheld PC, there are limits on the field sizes as follows:
  - Birthday and Anniversary are special fields for data input
  - Notes field can be up to 14,998 bytes
  - All other fields can be up to 1,023 bytes.

  On the ZR Series unit, the record size must be less than 2048 bytes but there is no limit on the field size. When data is received on the unit, data exceeding the field size limits is truncated.
- In the Unit to Unit dialog box on the ZR Series unit, turning on With Link Information will not send the linked data to the handheld PC.
- Since the name information on the handheld PC is stored in several fields, the name field on the ZR Series unit is split sd follows:



- The handheld PC uses more fields for storing address information than the ZR Series unit. Therefore the fields are mapped as follows:



5. Flash Eeprom Service Writing/Checking Procedures

The procedures are for writing into the FLASH-EEPROM in the ZR-3000/3500X. Servicing for the ZR-3000/3500X is performed in the following cases:

- When the MAIN PWB unit is replaced.
- When the MAIN ROM PWB is replaced.
- When the FLASH-EEPROM version is updated.

Introduction

Writing into the FLASH-EEPROM of the ZR-3000/3500X is performed in the following procedures.

- Install the patch transfer program of the FLASH-EEPROM for IBM PC.
- Connect the unit with the IBM PC and write.

5-1. Installing the patch transfer program of the FLASH-EEPROM for IBM PC

1) Necessary devices

- IBM PC (compatible machine): MS-Windows 95 installed in the hard disk
- Floppy disk 1 (* 2): Check the label

ZR-3000/3500X ROM V1.0 or later FLASH-EEPROM writing software for MS-Windows 95 Ver F .F mm/dd/yy

Disk content:

\setup*.* : Writing tool

\Z-lite(x).Vxx(* 3): Data

* 1: Trademark Microsoft

* 2: Supplied by SHARP. In the future, it may be supplied through the communication network instead of by a floppy disk.

* 3: "xx" shows the version number.

2) Operating procedure

1. Turn on the power of the IBM-PC (compatible machine) to start the MS-Windows.
2. Set the disk to IBM PC (compatible machine).
3. Start the explorer.
4. Make a working directory.
5. Use the explorer to execute\setup\setup.exe.
6. Follow the instruction of the install program.

[Note] DLL files are copied into the directory of \Windows\Systems.

5-2. Rewrite procedure of 1 Mbit FLASH-EEPROM in the ZR-3000/3500X (ROM version 1.0 or later)

1) Necessary devices

- IBM-PC (Compatible machine): MS-Windows 95 installed in the hard disk.
- AC adapter (EA-23E) for the ZR-3000/3500X: 1 unit
- Floppy Disk: 1 (* 2): Check the label.
- RS-232C cross cable (Since the hardware flow is required, RTS and CTS must be connected.)
- RS-232C level convertor [CE-137T]

ZR-3000/3500X ROM V1.0 or later FLASH-EEPROM writing software for MS-Windows 95 Ver F .F mm/dd/yy

Disk content:

\setup*.* : Writing tool

\Z-lite(x).Vxx(* 3): Data

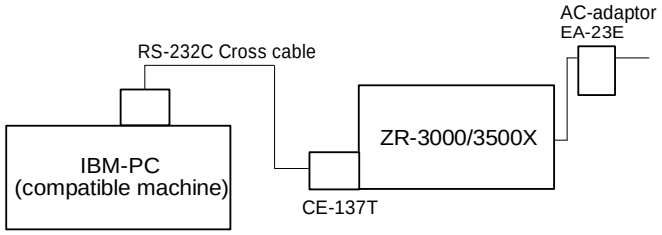
* 1: Trademark Microsoft

* 2: Supplied by SHARP. In the future, it may be supplied through the communication network instead of by a floppy disk.

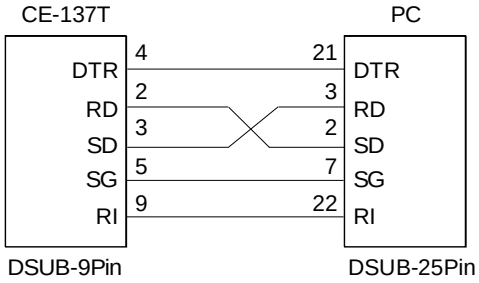
* 3: "xx" shows the version number.

2) Operating procedure

1. Connect the devices as shown below:



<Wiring diagram>



2. Turn on the power of the IBM-PC (compatible machine) to start the MS-WINDOWS 95.
3. Start the explorer and start patch.exe.

<Operation on the unit side>

4. Set to the DIAG mode, and select (43 ERASE 1M FLASH).

   The patch is erased.
5. Set to the DIAG mode, and select (47 UPDATE 1M FLASH).

   The display shows "*****UPDATE 1MFLASH*****."

<Patch transfer program operation>

6. Use Browse button to select the patch file.
7. Select the COM PORT.
8. Push the send button to send the patch file.

   Causes of errors on the unit side are as follows:

   (1) SIO ERROR!!: The communication conditions are not proper. Time-out (About 5 min). Repeat the procedures again.

   (2) ROM VER ERROR!!: The ROM version of ZR-3000/3500X does not correspond to the patch data.

   (3) PATCH VER ERROR!!: The PATCH version of ZR-3000/3500X is later than or the same as the target patch data.

   (4) LOW BATTERY!!: When ZR-3000/3500X is in low battery.

   (5) ERROR!!: The other errors than the above.

   On the unit side, the "X" bar extends along with the sound, and the process content is shown on the bar.

   READ: Reading of patch data

WRITE: Writing of patch data

VERIFY: Verifying patch data (The display is made in an instant.)

9. End of patch writing

When patch writing is completed, the bar display is cleared. At the same time, the check sum is displayed on the lower right side.

Note: The following operations of patch erase, write, and verify should be performed immediately after entering the diag mode by "ON" + "D" + "Reset."
Do not perform the operations after checking the other items.

43	ERASE	1M	FLASH
45	VERIFY	1M	FLASH
47	UPDATE	1M	FLASH

5-3. Copying patch data to products from the ZR-3500X master unit

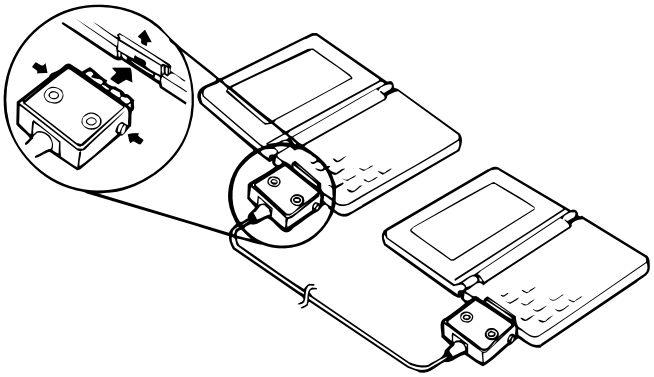
<Tools>

1 ZR-3500X master unit

2 Data transfer cable CE-315L

(Procedure)

Connect the master set and the slave set with the cable.



(Slave side)

1. Start the DIAG menu. ("ON" + "D" + "RESET")
2. Touch the menu key three times.
3. Touch "43. ERASE 1M FLASH."
4. Touch "47. UPDATE 1M FLASH."

(Master side)

1. Start the DIAG. menu. ("ON" + "D" + "RESET")
2. Touch the menu key three times.
3. Touch "49. PATCH MASTER."

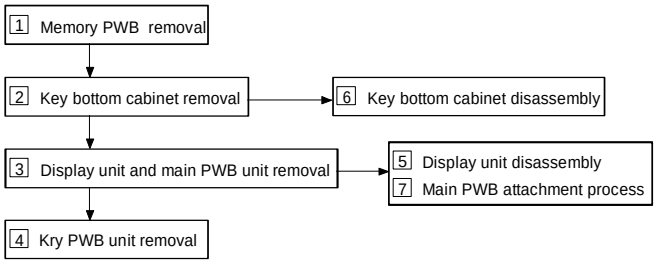
* NOTE: It is required that the master unit and the slave unit should be of the same ROM version.

CHAPTER 4. DISASSEMBLY AND ASSEMBLY

This chapter mainly describes the disassembly procedure. For assembly, reverse the disassembly procedures. If any special care is required for assembly, "Note for assembly" is provided.

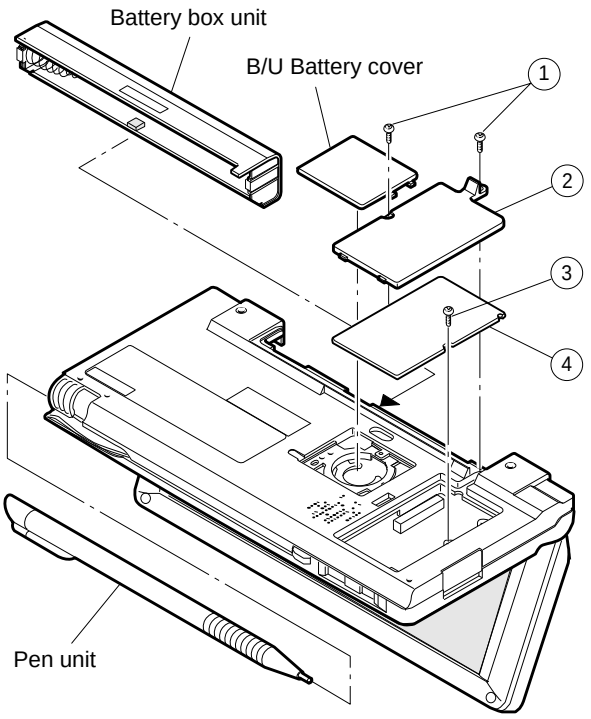
Simple and easy replacement procedures of units and parts are omitted.

[Flowchart of disassembly]


1 Memory PWB removal
2 Key bottom cabinet removal
6 Key bottom cabinet disassembly
3 Display unit and main PWB unit removal
5 Display unit disassembly
7 Main PWB attachment process
4 Kry PWB unit removal

1 Memory PWB removal

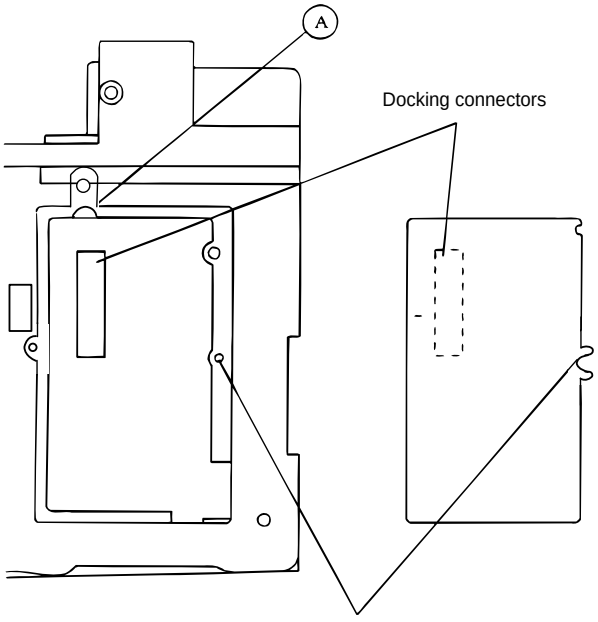
1. Remove two screws 1 .
2. Remove ROM module cover 2 .
3. Remove one screw 3 .
4. Remove memory PWB 4 .



[Note for assembly]

1. Memory PWB attachment screw tightening

1. memory PWB attachment screw tightening



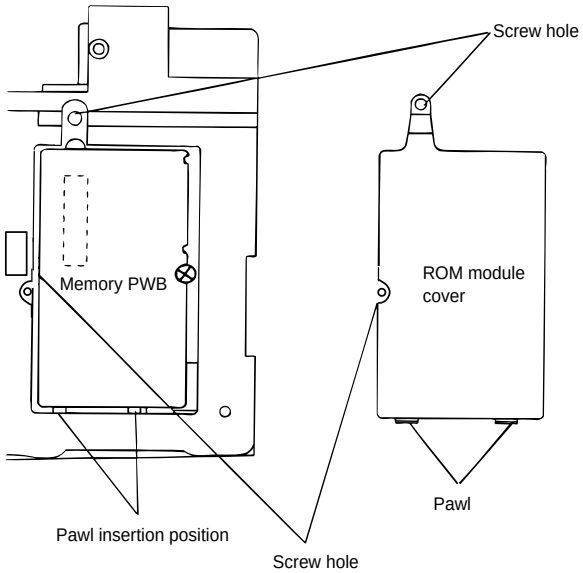
1) Fit and connect the docking connector of the main PWB and the docking connector of the memory PWB.
2) Hold the memory PWB and tighten the screw.
   * Tightening torque is 1.5Kgf· cm± 7%

Note 1) When connecting the docking connectors, fit the main side and the memory side properly and connect.
If positioning is improper, they may be broken.

Note 2) When removing the memory PWB, remove it from section A .
If it is removed from the other section, a stress is applied to the docking connectors.

2. Module cover attachment screw tightening

2.Module cover attachment screw tightening

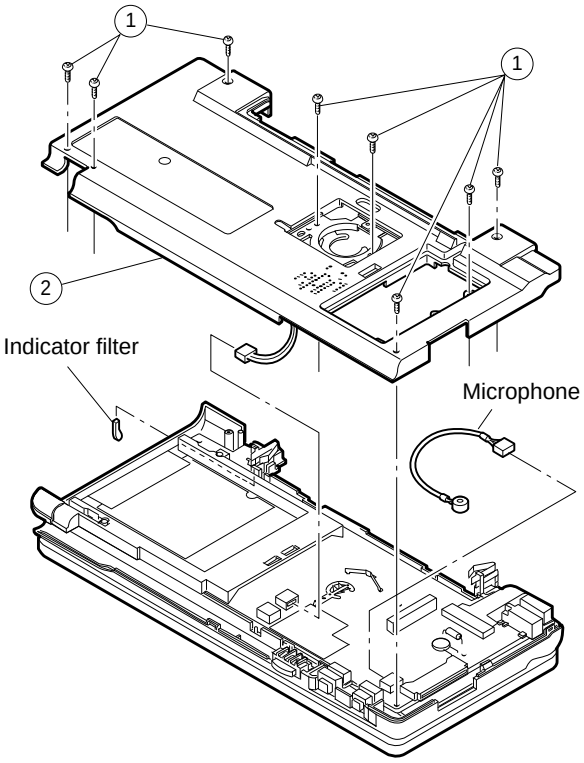


1) Insert two pawls of ROM module cover into the lower cabinet pawl engagement positions to attach.
2) Tighten two ROM module attachment screws.

* Tightening torque is 1.5Kgf· cm± 7%

2 Key bottom cabinet removal

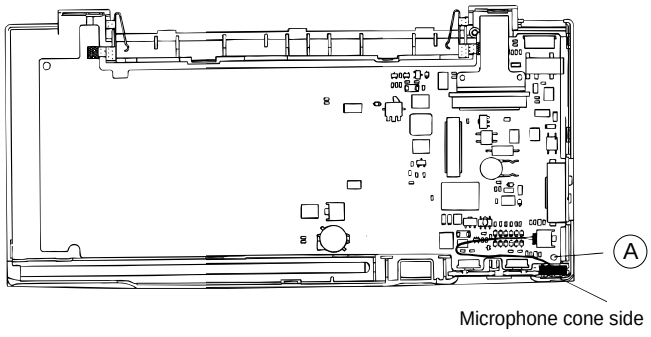
1. Remove eight screws 1 and remove key bottom cabinet 2 .



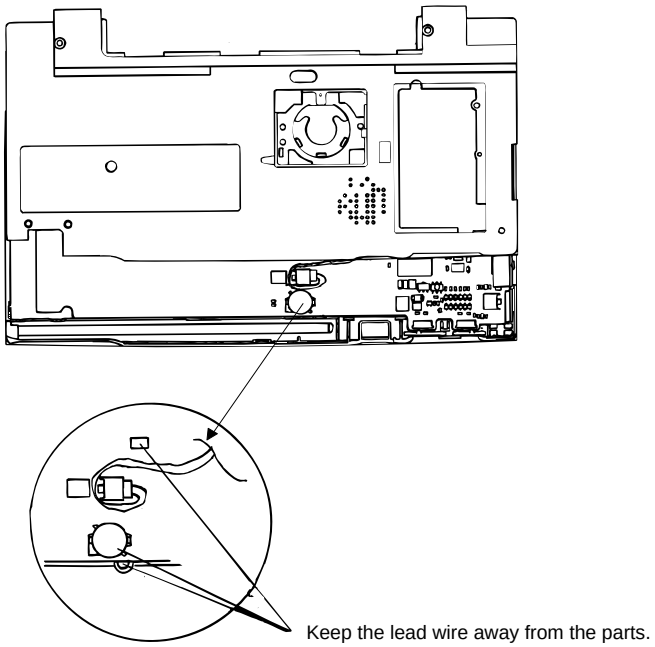
[Note for assembly]

1. Microphone attachment

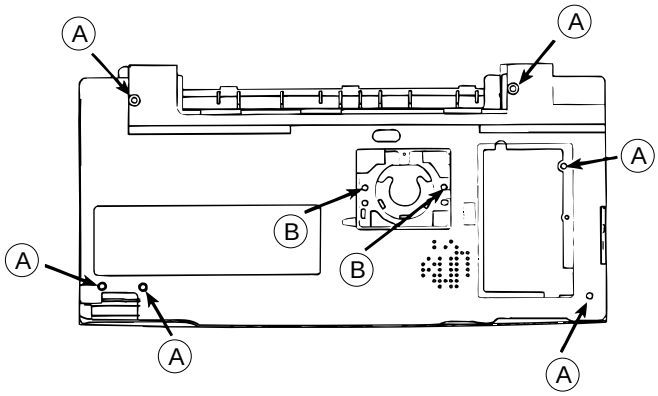
1) Insert the connector until it is locked. (Be careful of inserting direction and bending.)
2) Insert the microphone body into the cabinet. (Be careful of the inserting direction.)
3) Treat the wire not to cover the upper side of recording/indicator button and screw hole A .



2. Speaker lead wire process



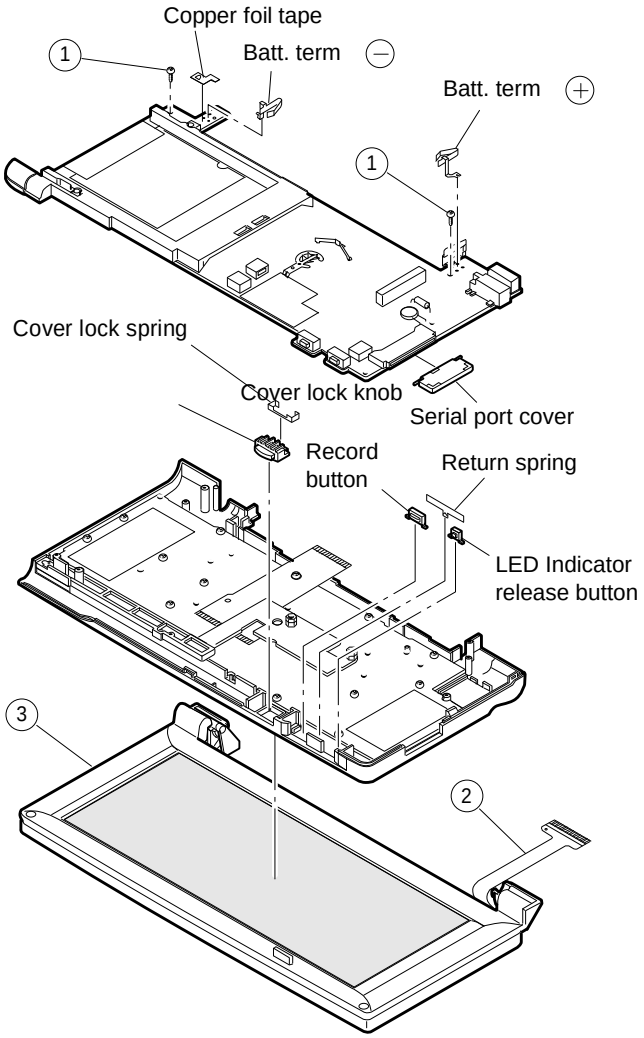
3. Key lower cabinet screw tightening



1) Tighten six screws ← A .
   * Tightening torque: 1.6kgf· cm± 7%
2) Tighten two screws ← B .
   * Tightening torque: 0.6kgf· cm± 7%

3 Display unit and Main PWB unit removal

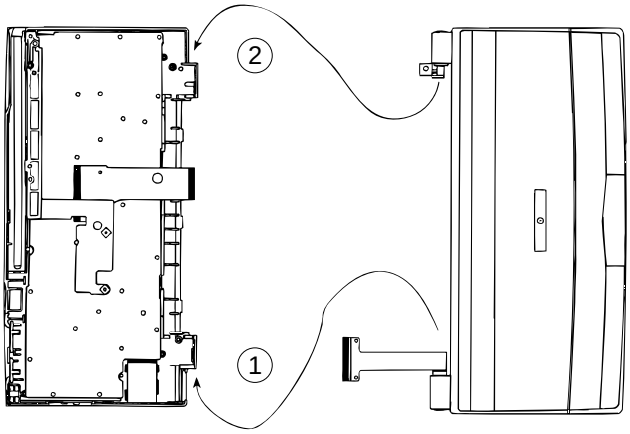
1. Remove two screws 1 .
2. Remove LCD FPC 2 and remove Display unit 3 .
3. Remove key FPC 4 and remove Main PWB unit 5 .



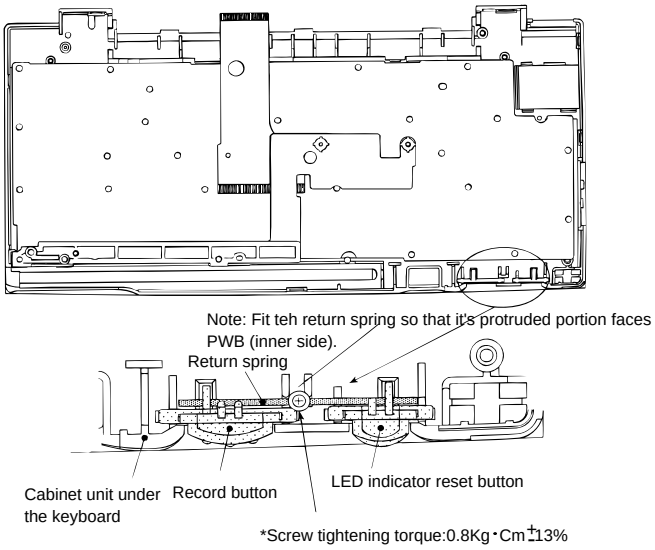
[Note for assembly]

1. Attach the display side unit to the key upper cabinet.

(1) Connect in the sequence of (1) -- (2) as shown in the figure below. Close the display side unit (cover).

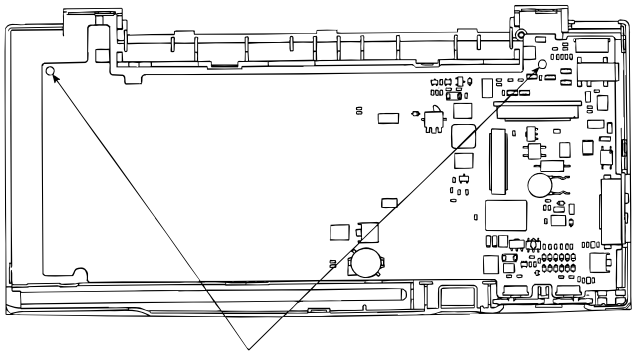


2. Tighten the return spring to the key upper cabinet with a screw, then attach the recording/LED indicator release button.


Note: Fit teh return spring so that it's protruded portion faces PWB (inner side).
Return spring
Cabinet unit under the keyboard
Record button
LED indicator reset button

*Screw tightening torque:0.8Kg・Cm ±13%

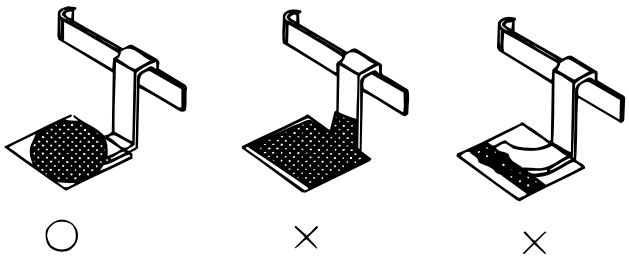
3. PWB unit screw tightening (2 positions)



* Tightening torque: 0.7kgf.cm ±15%

4. Battery terminal (+)(–) soldering conditions

(Soldered state)



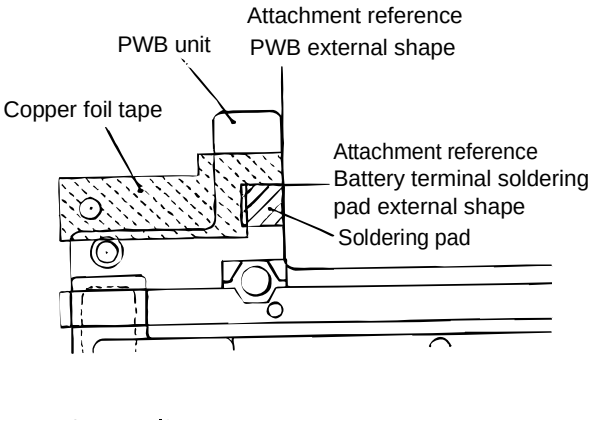
○ × ×

Solder tip temperaturn 350 ℃ or less
Soldering time 3sec or less

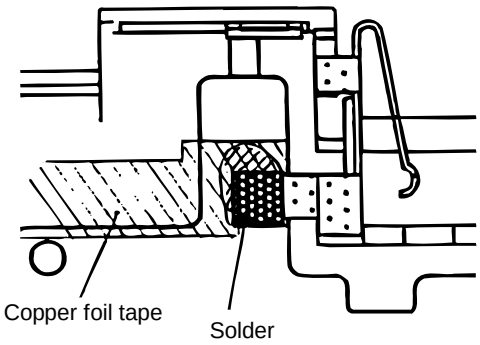
5. Copper foil tape attachment

Key cabinet side

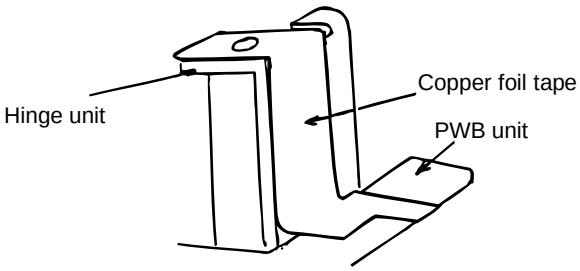
(1) Temporarily attach the copper foil tape to be added to the PWB unit as shown in the figure below.



(2) When soldering the battery terminals, solder the copper foil tape together.

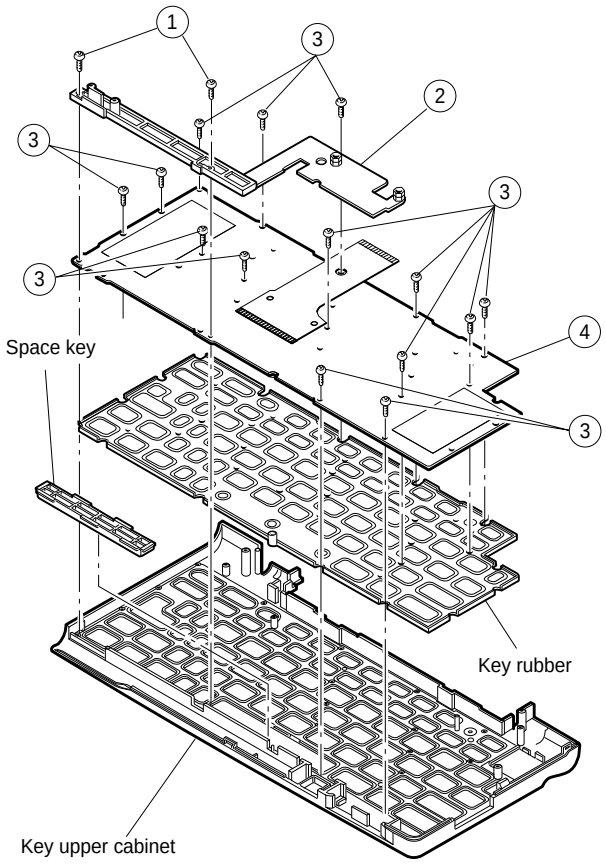


(3) Attach the display side unit, attach copper foil tape t the side of the hinge unit, and tighten the key bottom cabinet together.



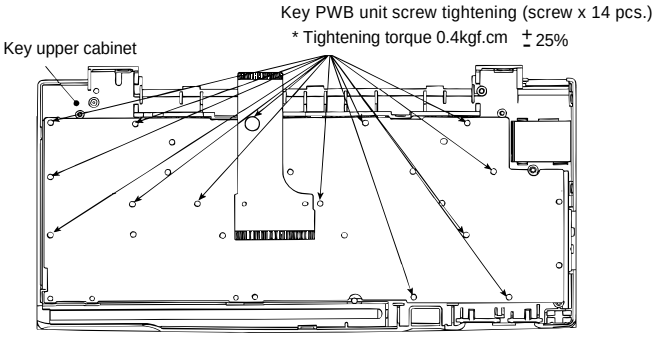
4 Key PWB unit removal

1. Remove two screws 1 and remove chassis B 2 .
2. Remove fourteen screws 3 and remove key PWB unit 4 .

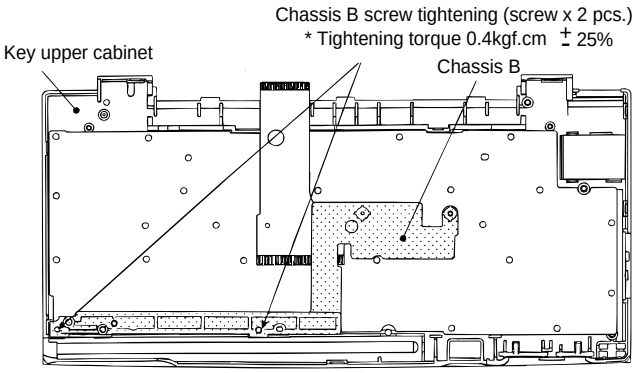


[Note for assembly]

1. Key upper cabinet key PWB unit screw tightening (screw × 14pcs.)

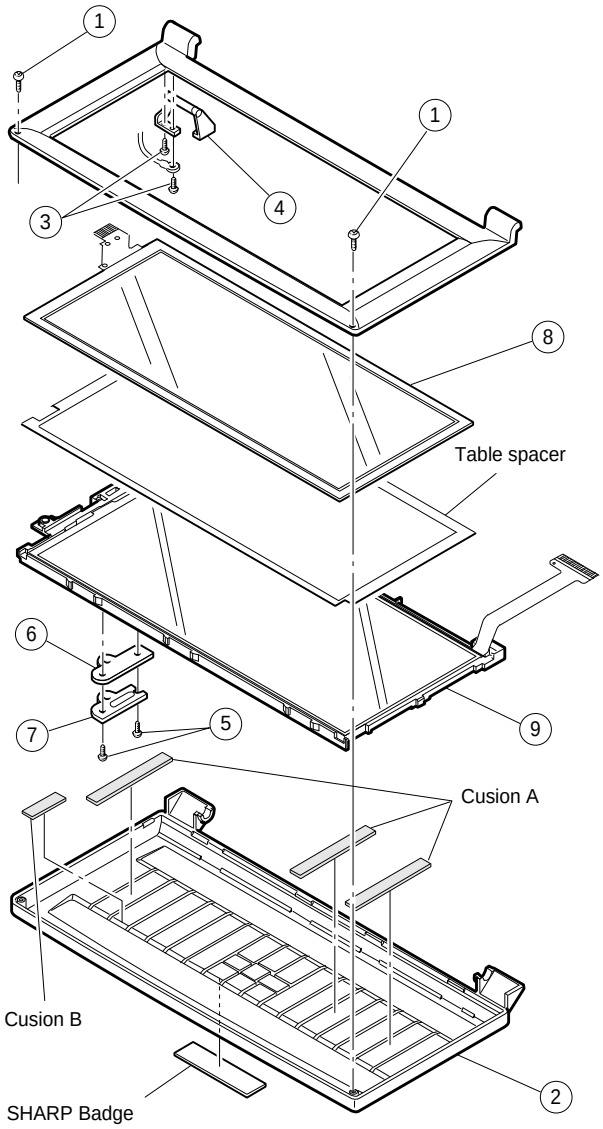


2. Chassis B attachment to key upper cabinet (screw × 2 pcs)



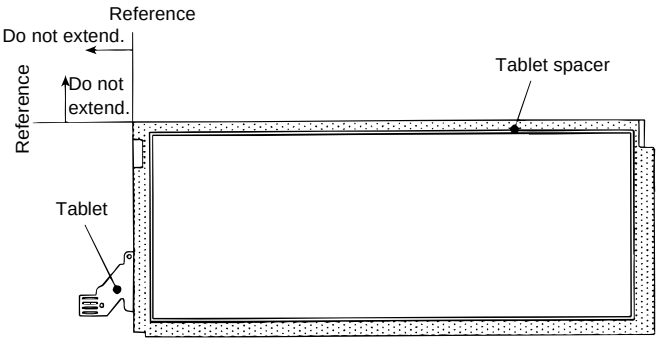
5 Display unit disassembly

1. Remove two screws 1 and remove Display bottom cabinet 2 .
2. Remove two screws 3 and remove hinge unit 4 .
3. Remove two screws 5 , pressure angle 6 , and pressure rubber 7 .
4. Remove tablet unit 8 .
5. Remove LCD unit 9 .

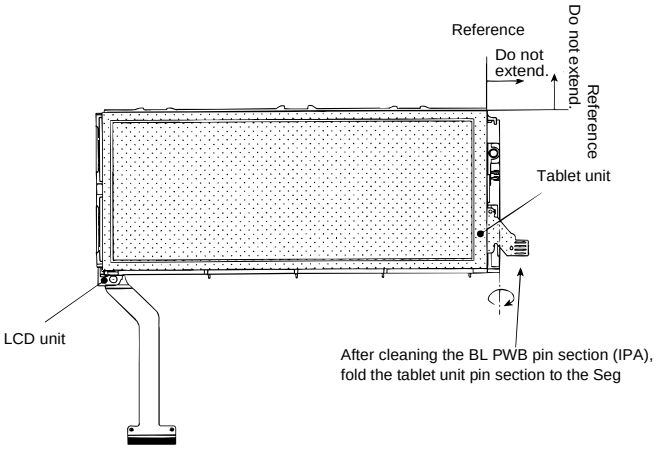


[Note for assembly]

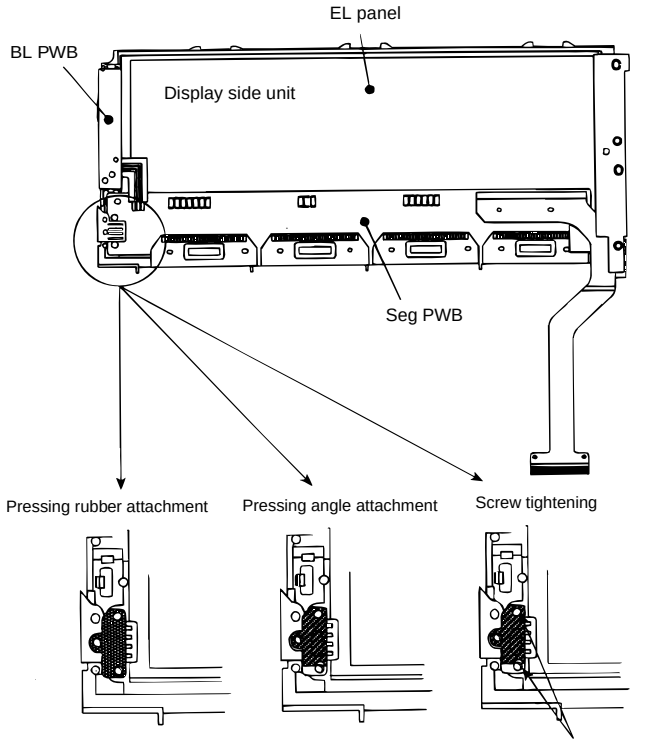
1. Attachment of tablet spacer to the tablet (Use the jig.)



2. Attachment of tablet unit to the LCD unit


Reference
Do not extend.
Do not extend.
Reference
Tablet unit
LCD unit
After cleaning the BL PWB pin section (IPA), fold the tablet unit pin section to the Seg

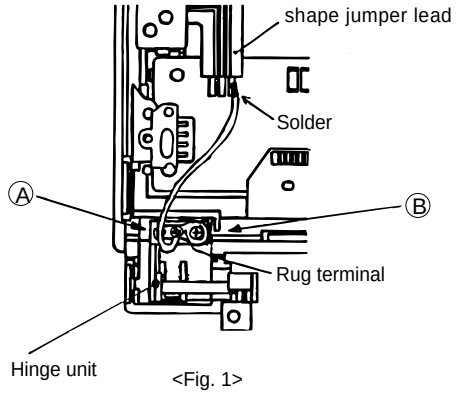
3. Pressing rubber/pressing angle attachment screw tightening



* Tightening torque: 1.0Kgf.cm±10%

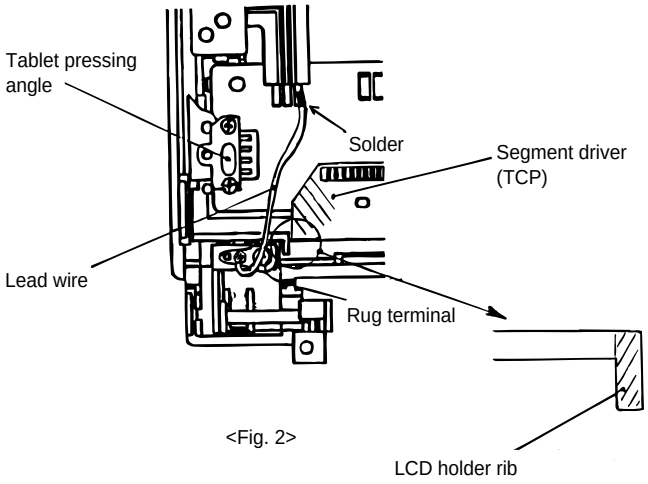
4. Attachment/soldering of rug terminal with lead wire

(1) Tighten the hinge unit and the rug terminal together with a screw.
   1) First, fix the hinge unit with a screw on A side as shown in the Fig. 1.
   2) Put the rug terminal over the hinge unit screw tightening section as shown in Fig. 1, tighten it together with the hinge unit with a screw on B side as shown in Fig. 1.



<Fig. 1>

(2) Lead wire wiring process
As shown in Fig. 2, move the lead wire to the right from the state of Fig. 1 so that the lead wire is between the tablet pressing angle (including a screw) and the LCD unit segment driver.

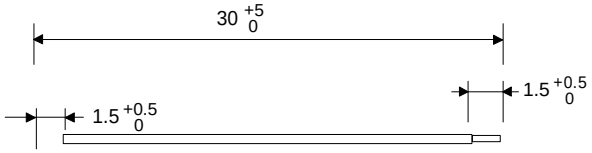


<Fig. 2>

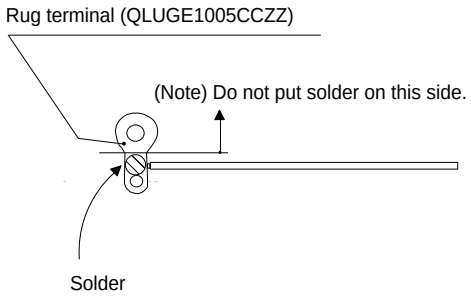
(Note) (1) Keep the lead wire away from the LED holder rib (shaded section in the figure). (If, not, the lead wire may be pinched between the display cabinet A (external cabinet) rib.)
(2) Keep the lead wire away from the tablet pressing angle (including a screw). (The space between the display cabinet A ceiling is insufficient.)

Lead wire work dimensions

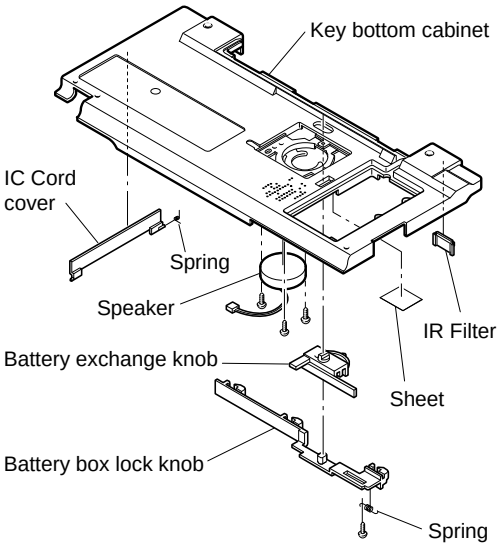
(UL style 1571 AWG 28 lead)

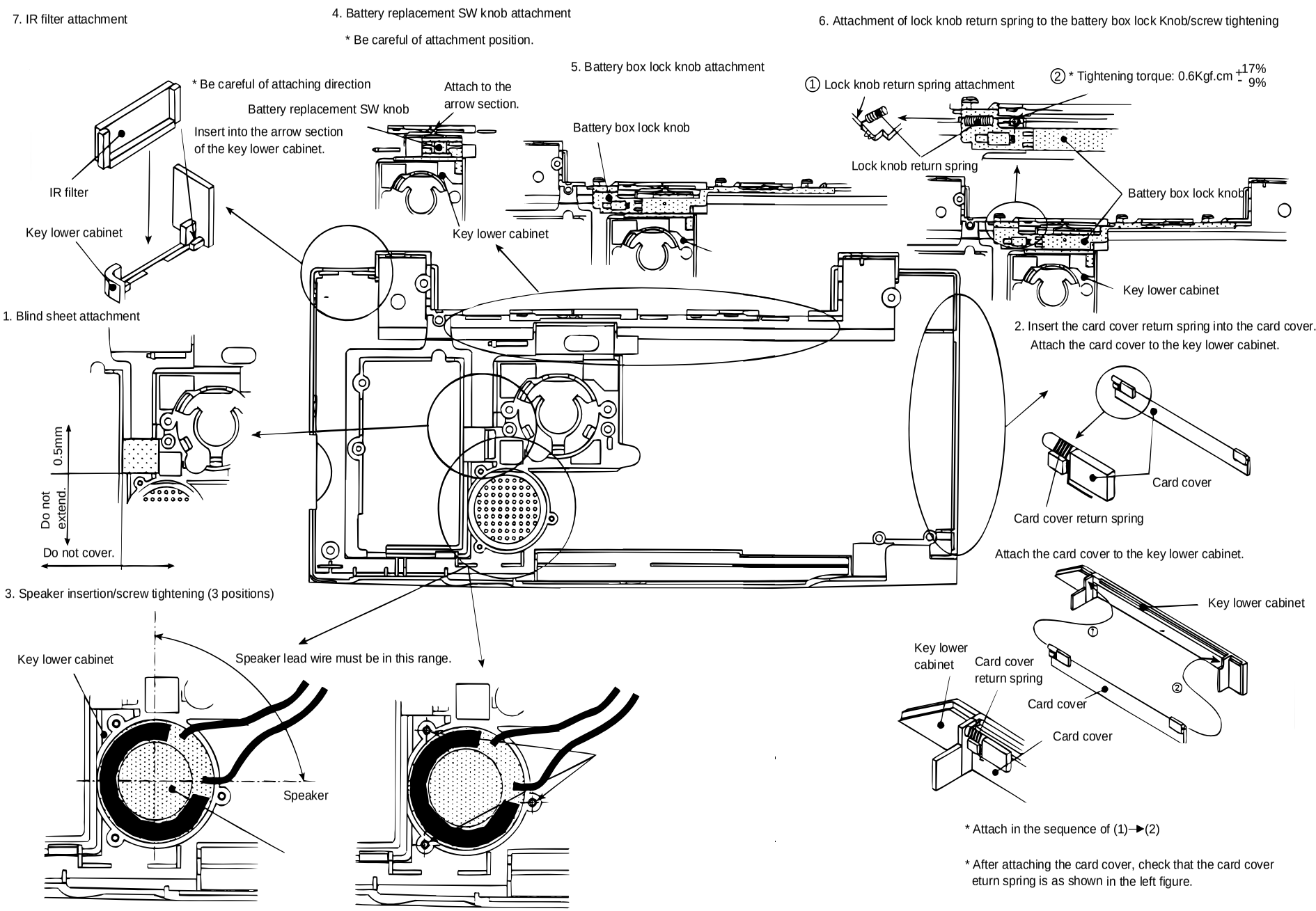


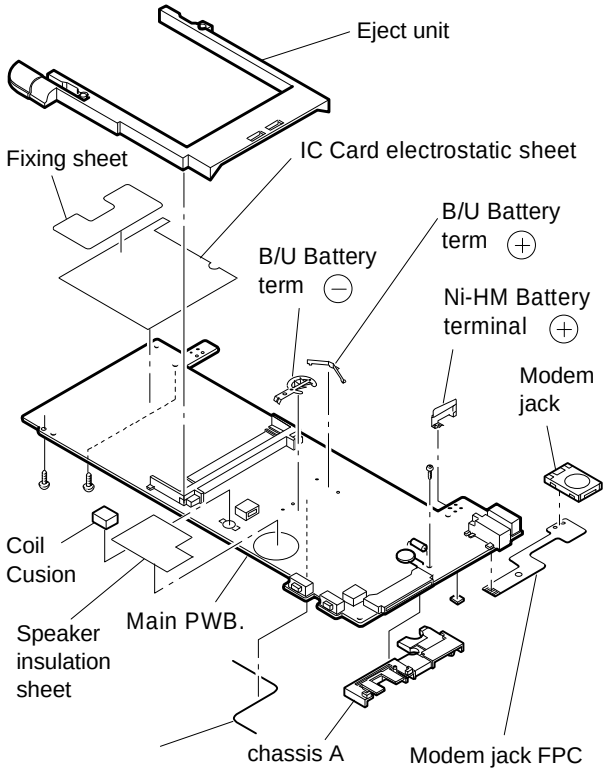
Soldering of rug terminal and lead wire



6 Key bottom cabinet disassembly

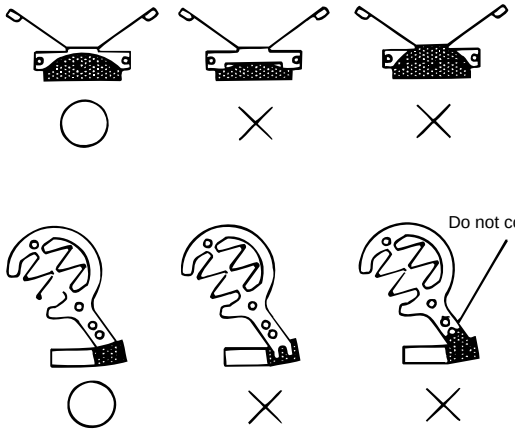



7. IR filter attachment
* Be careful of attaching direction
IR filter
Key lower cabinet
4. Battery replacement SW knob attachment
* Be careful of attachment position.
Attach to the arrow section.
Battery replacement SW knob
Insert into the arrow section of the key lower cabinet.
Key lower cabinet
5. Battery box lock knob attachment
Battery box lock knob
6. Attachment of lock knob return spring to the battery box lock Knob/screw tightening
① Lock knob return spring attachment
② * Tightening torque: 0.6Kgf.cm +17% -9%
Lock knob return spring
Battery box lock knob
Key lower cabinet
1. Blind sheet attachment
0.5mm
Do not extend.
Do not cover.
2. Insert the card cover return spring into the card cover.
Attach the card cover to the key lower cabinet.
Card cover
Card cover return spring
Attach the card cover to the key lower cabinet.
Key lower cabinet
Key lower cabinet
Card cover return spring
Card cover
Card cover
3. Speaker insertion/screw tightening (3 positions)
Key lower cabinet
Speaker lead wire must be in this range.
Speaker
* Attach in the sequence of (1)→(2)
* After attaching the card cover, check that the card cover return spring is as shown in the left figure.



[Note for assembly]

1. B/U battery (+) (–) soldering

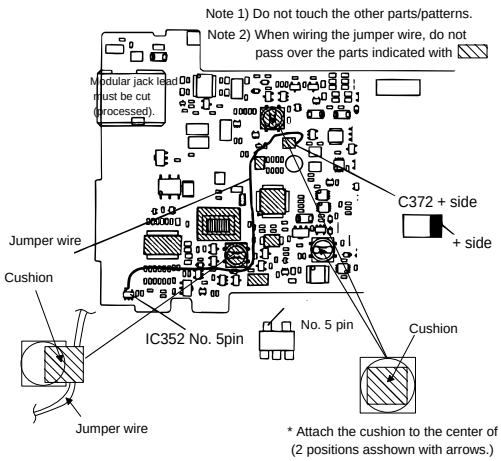


2. Jumper wire attachment

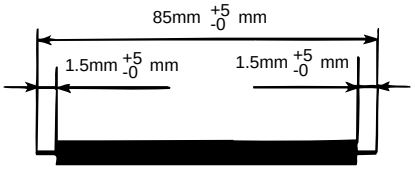
1) Jumper wire wiring (ASIC surface)

2. Jumper wire attachment

1) Jumper wire wiring (ASIC surface)

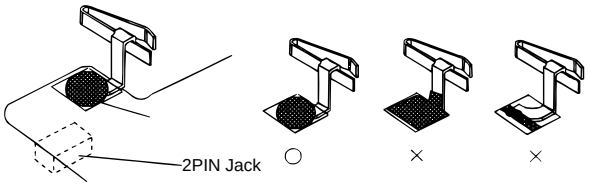

Note 1) Do not touch the other parts/patterns.
Note 2) When wiring the jumper wire, do not pass over the parts indicated with
Modular jack lead must be cut (processed).
C372 + side
+ side
Jumper wire
Cushion
IC352 No. 5pin
No. 5 pin
Cushion
Jumper wire
* Attach the cushion to the center of the coil. (2 positions asshown with arrows.)

2) Jumper wire cutting/striping dimension



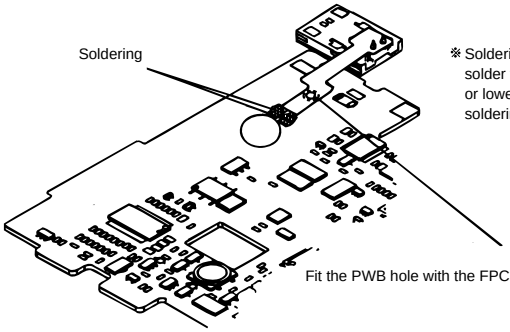
Wire material U/L Style 1571 ILUX
electrical wire AWG28

3. Ni-HM battery pack pin (+) soldering

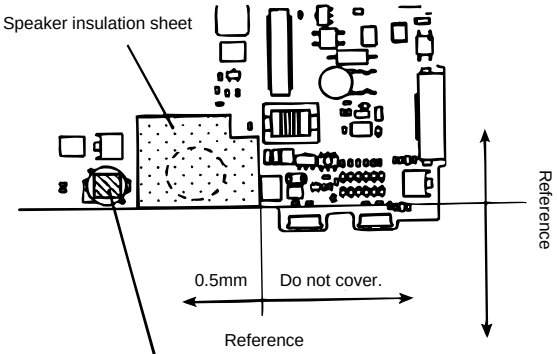


* Soldering conditions
Solder tip temperature 360˚C or lower
Soldering time 3sec or less

4. MODEM jack unit soldering



5. Speaker insulation sheet/coil cushion attachment



Note) Before attaching, remove oil from the attachment surface ofthe insulation sheet. After attachment, press to fix.

Coil cushion

Allowable extension from the coil body is within 1mm.
Press to fixafter attaching.

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